LOCAL COMMENT LETTERS

CITY OF HUNTINGTON BEACH

ENVIRONMENTAL BOARD

November 1, 2002

Mr. Ricky Ramos
City of Huntington Beach
Planning Department
2000 Main Street, 3rd Floor
Huntington Beach, CA 92648

SUBJECT: DEIR Poseidon Seawater Desalination Project

Dear Mr. Ramos:

The Environmental Board of the City of Huntington Beach is pleased to submit comments and recommendations regarding the subject Draft Environmental Impact Report (DEIR). After reviewing the DEIR and discussing it at our October 3rd meeting, the Environmental Board voted to submit comments and recommendations reflecting the issues discussed below. a

Project Description

The proposed project will be utilizing a total of 36 large electric water pumps with ranges up to 3,500 hp. The Environmental Board recommends that the project be required to use the most energy efficient motors available to drive the pumps. b

Pipeline

A pipeline up to 10 miles is proposed by two alternative alignments in order to tap into the water distribution system located in Costa Mesa. It is not discussed if there are any opportunities to tap into a distribution system that is closer to the proposed project. A closer location would avoid construction impacts. Additionally, there is conflicting information in the DEIR on the intended purpose of the product water. The project description states that the product water will be piped into the *regional water distribution system to meet the needs of the Southern California Region and particularly Orange County*, however, in Appendix G, it is stated that water is intended for *south Orange County*. This should be clarified. c

Given the significant effort that will be involved in constructing a pipeline, the project proponent should be required to coordinate with other agencies the possibility of co-locating other needed pipelines, such as reclaimed water lines along with the proposed water distribution line. Coordinated efforts enable projects to be more cost effective while minimizing environmental impacts. d

Impact to the Marine Environment

It is reported in the DEIR that under worst case situations salinities at the outfall can reach up to 55.4 ppt. Assuming the fish and benthic communities can tolerate a salinity of up to 10% above normal (10% above 33.5 ppt), an unacceptable area impacted during worst case is 15.6 acres of ocean floor and 18.3 acres of water. This scenario is projected to occur 1% of the time, however, other scenarios can occur that result in salinities above acceptable levels impacting a smaller area. The DEIR also reports that the fish communities will not be impacted since they are mobile and can leave the area under these adverse conditions. However, the benthic communities are not mobile and it is reported in the DEIR that "*local benthic community diversity is likely to be depressed ...*" during these conditions. The DEIR concludes that the impacts here will not be significant since *temporal fluctuations in abundance and diversity of benthic species are the norm for the shallow water communities...* The document then seems to indicate that there will be replacement species. e

The Environmental Board disagrees that these impacts are not significant. On page 4.3-6 it is reported that one of the objectives for marine water quality under the *California Ocean Plan* is for *Marine communities, including vertebrate, invertebrate, and plant species not be degraded.* Clearly, the waters in the vicinity of the outfall will be at non-acceptable levels enough of the time to degrade the benthic community. Although it is thought that replacement species may compensate for the degradation, some areas close to the outfall will be continually depressed, while others further away degraded on a cycle. f

Also, on page 4.3-7, one of the significance criteria under CEQA is the degradation of water quality. The proposed project will result in continual degradation of water quality ranging from small areas to larger areas depending upon the operation of the AES power plant. Given the degradation of the benthic community and water quality, the proposed project should be considered to have a significant impact on water quality. g

Additional Water Quality Mitigation Measure

Given what the Environmental Board believes is a significant impact on water quality, we recommend an additional mitigation measure that would require period biological monitoring of the benthic community surrounding the AES outfall. Monitoring should be conducted prior to the construction of the facility that would serve as the baseline upon which future effects could be compared. Results should be reviewed by independent biologist to determine any significant impacts on the environment. This level of monitoring is not only important to this project areas, but will provide important information to other projects that may be sited around the state in the future. h

Water Storage Alternatives

The project proposes to build an underground water storage facility. As an alternative, it is proposed to utilize one of the existing tank facilities for water storage. The use of the alternative storage proposal will avoid the impacts of constructing the underground facility and make use of i

an existing resource. On this basis, the Environmental Board supports the above ground storage proposal. i

The Environmental Board appreciates the opportunity to comment on this project and is available to discuss these comments if appropriate. Please contact me with any questions or comments you may have. j

Yours truly,

Frank R Caponi

Frank R. Caponi
Member

Response No. 10

City of Huntington Beach Environmental Board
Frank R. Caponi

10a. This paragraph provides introductory text regarding the Environmental Board's comments. No response is required.

10b. The applicant will utilize the most energy efficient electric pumps available to serve the proposed project in an effort to minimize energy consumption and reduce electricity costs.

10c. The location of the tie-in from the proposed desalination pipeline to the existing regional distribution system is controlled by the need to connect to a 36" diameter pipeline. The existing pipeline located closer to the facility is less than 36" in diameter and would be too small. In addition, Appendix G of the Draft EIR, *PRELIMINARY PIPELINE ASSESSMENT*, has been revised and is included as Appendix B of this Responses to Comments packet.

10d. The precise start date of construction for the proposed project is yet to be determined. However, prior to the initiation of construction, the applicant will coordinate with the City of Huntington Beach and City of Costa Mesa to determine if other infrastructure projects can be co-located along the same alignment and if such an effort is feasible.

10e. The intention of the Draft EIR was to make clear that the "worst case" salinity distribution scenario was unlikely to ever occur. The Draft EIR gives the "worst case" occurrence probability of <1%. The Draft EIR correctly concludes that "average" conditions will prevail and that the "worst case" is very unlikely to ever occur. Nevertheless, the Draft EIR does enter into a detailed account of what the biological consequences of the "worst case" might be. If the "worst case" occurred, as stated in the Draft EIR, a range of possible results could follow.

It is important to put the "worst case" scenario analysis in its proper perspective. It is called the "worst case" because it assumes the co-occurrence of the absolutely worst combination of all the variables that would increase the "salinity discharge volume" and does this while also simultaneously lessening the ocean's capacity to dilute the discharge.

"Worst case," for example, assumes the prevalence of all the ocean conditions that would lessen mixing (i.e., gentlest sea state, low wind levels, and low tidal amplitude), as occurs from time to time in the summer. It further assumes that this combination of ocean events would occur continuously for 30 days. (While such assumptions are needed to run the salinity distribution model, one reason they are not feasible is due to the 14-day tidal cycle).

The next step in developing the "worst case" model is to combine the calm-sea scenario with "worst case" assumptions about power plant water flow. These assumptions are that the power plant's electrical generation will be reduced, which lowers cooling water discharge and lessens the dilution of the concentrated seawater stream from the desalination facility. Tied to this chain of events are assumptions that the desalination facility would continue to operate at full capacity and that the power plant's low activity would be sustained for 30 days. This combination is highly unlikely given that sustained

conditions of calm oceans are likely in the summer, during a time of peak electric power demand.

It is evident from this account that the underlying assumptions regarding the combination of events needed to trigger the "worst case" scenario are unlikely to occur. Jenkins and Wasyl state a less than 1% probability of occurrence. Given that all these events would need to occur and then remain in place for 30 days makes the "worst case" salinity distribution extremely unlikely.

Thus, rather than defining the "worst case" environmental state that can occur, the real value of the "worst case" scenario is in demonstrating the distributional model's computational efficacy. "Worst case" modeling verifies that the model is sensitive to variations in the parameters put into it, and that it will continue to run and return rational results for the time interval specified. Also refer to Responses 2d, 2e, and 7h, above.

10f. This comment is again based on the Draft EIR's account of what could happen under the "worst case" conditions. As stated above, the intent of the Draft EIR was to emphasize that prevalence of "average" conditions and the highly unlikely occurrence of "worst case" conditions. See Responses 7h and 10e, above.

10g. Response 7h, above, indicates that even under the "worst case" scenario (which has an extremely remote chance of occurring), impacts to marine biological resources would be localized, the salinity plume would disperse quickly, and the duration of such a condition would likely be short. As water quality impacts are not anticipated to be significant, water quality would not be substantially degraded, and the CEQA significance criteria noted in this comment has not been exceeded. (significance criteria have been addressed in Responses 7f and 7g, above).

10h. Refer to Responses 7h and 10e, above. As water quality impacts and impacts to marine biological resources are not anticipated to be significant, biological monitoring during long-term project operation will be conducted as directed by the Regional Water Quality Control Board (RWQCB). Several marine biological surveys have been conducted within area of the AES outfall, and have been utilized within the Draft EIR to determine the level of anticipated impacts.

10i. As stated within the Draft EIR, the alternative aboveground product water storage tank option proposes to utilize one of the existing fuel oil storage tank sites ("North" or "West" tank sites), but would not utilize the existing fuel oil tanks. Should this option be implemented, the existing fuel oil tank would be demolished and a new product water storage tank would be constructed. However, this comment has been noted.

10j. This text provides a conclusion to the comment letter, and does not require a response.

COMMENT 11

County of Orange
Planning & Development Services Department

THOMAS B. MATHEWS
DIRECTOR

300 N. FLOWER ST.
SANTA ANA, CALIFORNIA

MAILING ADDRESS:
P.O. BOX 4048
SANTA ANA, CA 92702-4048

NCL 02-114

November 1, 2002

Ricky Ramos
City of Huntington Beach
Planning Department
2000 Main Street
Huntington Beach, CA 92648

SUBJECT: DEIR for the Poseidon Seawater Desalination Project

Dear Mr. Ramos:

The above referenced item is a Draft Environmental Impact Report (DEIR) for the City of Huntington Beach. The project consists of the construction and operation of a 50 million gallon per day seawater desalination facility to be located on a seven acre portion of the 22 acre AES Huntington Beach Generating Plant at 21730 Newland Street, off Pacific Coast Highway. a

The County of Orange has reviewed the DEIR and offers the following comments regarding waste management:

Construction Considerations

As stated in the DEIR on page 1-2, two 42 to 48 inch water pipelines will be constructed to serve the project. In reviewing Exhibit 4 in the DEIR, it appears that the pipelines will be constructed in or adjacent to Hamilton Avenue. This is near the former Cannery Street refuse disposal station. The 28-acre Cannery Street facility closed in 1969 and is located on the northwest corner of Hamilton Avenue/Magnolia Street in the City of Huntington Beach. Within the Final EIR, please include an analysis of the construction of the water pipelines and any associated impacts of this construction related to the nearby Cannery Street refuse disposal station. b

It is advised that you consult with the Couth Coast Air Quality Management District (SCAQMD) and the Orange County Health Care Agency/Local Enforcement Agency (LEA) to determine if mitigation measures should be It is advised that you consult with the South Coast Air Quality Management District (SCAQMD) and the Orange County Health Care Agency/Local Enforcement Agency (LEA) to determine if mitigation measures should be implemented by the

that the power plant's electrical generation will be reduced, which lowers cooling water

project applicant during construction of the water lines within Hamilton Avenue, to monitor and/or control methane gas that may be present. If applicable, these mitigation measures should be included in the Final EIR. b

Waste Diversion

The City of Huntington Beach is responsible for meeting the Assembly Bill 939 (AB 939) mandate of 50% disposal reduction by the start of this year, and for preparing AB 939 solid waste planning documents. These documents include the Source Reduction and Recycling Element (SRRE), the Household Hazardous Waste Element (HHWE), and the Non-Disposal Facility Element (NDFE).

Construction- and demolition-generated waste (C&D) is heavy, inert material. This material creates significant problems when disposed of in landfills; since C&D debris does not decompose, it takes up valuable landfill capacity. Additionally, since C&D debris is heavy when compared with paper and plastic, it is more difficult for the County and cities to reduce the tonnage of disposed waste. For this reason, C&D waste debris has been specifically targeted by the State of California for diversion from the waste stream. Projects that will generate C&D waste should emphasize deconstruction and diversion planning, rather than demolition. Deconstruction is the planned, organized dismantling of the prior construction project, which allows maximum use of the deconstructed materials for recycling in other construction projects and sends a minimum of the deconstruction material to landfills. c

We recommend that this project address a waste reduction plan for the C&D waste generated from this project. This plan should be coordinated with the recycling coordinator for the City of Huntington Beach to help ensure AB 939 requirements are properly addressed.

Contaminated Soils

Construction and demolition-generated waste from the proposed project may contain fuel-contaminated soils. The project applicant should be aware that the County's solid waste landfills are not permitted to accept fuel-contaminated soils. Fuel-contaminated soils must be transported and disposed at disposal facilities that are permitted to accept these materials. d

Thank you for the opportunity to respond to the DEIR. If you have any questions, please contact Charlotte Harryman at (714) 834-2522. e

Sincerely,

Timothy Neely, Manager
Environmental Planning Services Division

ch

Response No. 11

County of Orange Planning & Development Services Department
Environmental Planning Services Division
Timothy Neely, Manager

11a. This paragraph provides a summary of the project description, and does not require a response.

11b. As stated within Section 4.9, *CONSTRUCTION RELATED IMPACTS*, of the Draft EIR, pipeline construction in the vicinity of the former Cannery Street Landfill would comply with all local, state, and federal regulations in regards to landfill gas. Standard construction practices will be implemented to determine the potential for landfill gas, and, if deemed necessary, an appropriate gas detection, venting, and/or barrier system will be implemented to reduce impacts to less than significant levels. Mitigation measures provided in the Draft EIR include coordination with the Orange County Health Care Agency, South Coast Air Quality Management District, Regional Water Quality Control Board, and City of Huntington Beach Fire Department.

11c. As stated within Section 4.9, *CONSTRUCTION RELATED IMPACTS*, of the Draft EIR, the applicant shall prepare a waste reduction plan for construction/operational waste and the project will be in compliance with AB 939 requirements.

11d. As stated in Section 4.9, *CONSTRUCTION RELATED IMPACTS*, of the Draft EIR, a Remedial Action Plan (RAP) will be prepared for any remedial activities required for implementation of the proposed project. The RAP will identify potential on-site contaminants and identify the type of landfill appropriate for such hazardous waste. Remedial operations shall be performed in accordance with recommendations contained in the RAP.

11e. This paragraph provides contact information for the agency, and does not require a response.

HUNTINGTON BEACH CITY SCHOOL DISTRICT

20451 Craimer Lane, Huntington Beach, California 92646 (714) 964-8888

NOV 04 2002

November 4, 2002

Mr. Ricky Ramos, Associate Planner
City of Huntington Beach Planning Department
2000 Main Street
Huntington Beach, CA 92648

Subject: Comments of the Huntington Beach City School District on the Draft Environmental Impact Report
Poseidon Seawater Desalination Project

Dear Mr. Ramos:

On behalf of the Huntington Beach City School District ("District"), we are submitting these comments on the Draft Environmental Impact Report ("DEIR") for the Poseidon Seawater Desalination Project ("Project"). It is noted that the Project is located in the southeast portion of the city of Huntington Beach at 21652 Newland Street, between Pacific Coast Highway, the Huntington Beach Channel, Edison Avenue, and Newland Street. It is understood that the Project consists of approximately seven acres. It is within Kettler Elementary and Sowers Middle School attendance areas. It is also within proximity to the Eader Elementary School attendance area. a

Page 4.6.2 sets for the Existing Conditions relating to schools. It states that the Huntington Beach City School District and its facilities are existing conditions that would be affected by the Project. The DEIR acknowledges that the Project is approximately 1.5 miles from Kettler and Eader elementary schools.

Page 4.6-7 through 4.6-8 sets forth the Impacts on school facilities. The discussion indicates that the project would have "negligible impacts" on school facilities with the city of Huntington Beach. The DEIR states that the Project is anticipated to have a student generation rate of .0000356882 per square foot. It is unclear if this is the student generation rate for the Huntington Beach Union High School District, the Huntington Beach City School District, or a combined rate. The DEIR should be corrected to indicate the individual rates of each of the school districts. b

Further, the DEIR does not calculate the number of students that would be generated from the Project. The DEIR fails to calculate the number of students that would be generated from the Project personnel following construction and from the personnel during construction who might relocated into the District as a result of their

employment by the Project. Without a calculation of the potential students that would be generated from the Project, the determination of the impacts is incomplete, and mitigation measure cannot be evaluated to determine if they will mitigate the impact to an insignificant level. b

Negligible impacts is defined in Webster's dictionary as "so small or unimportant or of so little consequence as to warrant little or no attention". This determination is set forth in the DEIR. However, there is no quantitative or equalization analysis that supports this conclusion. The DEIR should be revised to provide the qualitative and quantitative analysis that supported the conclusions that the Project will have a negligible impact. As an alternative, if the Project will impact the District as a result of the quantitative or qualitative analysis, then the DEIR should be revised accordingly. c

The DEIR also states that the Applicant will pay a commercial fee of $0.1287 per square foot of non-residential development within the Huntington Beach Union High School District. Further the DEIR states that the Huntington Beach City School District does not anticipate that the Project will have a significant impact on the District and does not require assessment fees or other mitigation measurers. This is an incorrect statement. The District suggests that when the appropriate analysis is completed, the Project will have an impact on the District. This impact will require the payment of development mitigation fees as is required for non-residential developments at a rate set forth by the District. The calculation of the impact and the required fees should be set forth in the DEIR and the DEIR should be corrected accordingly. d

The DIER states on Pages 4.6-21 that the mitigation measures to be imposed to apply to the school impacts is as follows:

> "PSU-1 Prior to the issuance of building permits, the Applicant will be required to pay a commercial fee of $0.1287 per square foot for non-residential development." e

This is no quantitative or qualitative analysis that would suggest that this mitigation measure is adequate to mitigate the impacts on the District to a level of insignificance as required by CEQA. The DEIR should be revised to provide this qualitative and quantitative analysis to support the conclusions set froth in the DEIR.

The District has had a relationship with the City whereby the City's General Plan provides for mitigation measures that have been agreed to between the City and the District. These measures have been consistently implemented by the District with the cooperation of the City for several years, and have addressed the development f

that has occurred in the community. These mitigation measures should be set forth in the DEIR. f

The General Plan in its Land Use Element (I-LU-27) states the following with regards to the mitigation of impacts on Educational Facilities:

> **"Develop a review process that would require that development impacts be reviewed by the City with the developer and with the School Districts prior to project review for the determination of necessary mitagations to school impacts. Require developers to meet with the appropriate school districts with the intent to mitigate the impact on school facilities, prior to project approval by the permitting City authority."**

Mitigation Measure PSU-1 states:

> **"Prior to the issuance of building permits, the Applicant will be required to pay a commercial fee of $0.1287 per square foot for non-residential development."** g

The District is concerned that Mitigation Measure PSU-1 is inconsistent with the prior mitigation measures that have been agreed to for the overall mitigation provided in the City's General Plan.

The District recommends that this Mitigation Measure PSU-1 be revised to state the following:

> **"Prior to the issuance of building permits for development, development impacts shall be reviewed by the City with the developer and with the School Districts for the determination of necessary mitagations to school impacts. The developer shall be required to meet with the appropriate school districts with the intent to mitigate the impact on school facilities, prior to the issuance of building permits by the permitting City authority."**

The District has further concerns with regards to the adequacy of the DEIR. These are discussed as follows:

1. Pipeline Construction Impacts – The Project calls of the construction of pipelines on Hamilton Avenue and Brookhurst Street. The construction of these pipelines may create hazardous conditions and detours that would affect the District's transportation programs, resulting in delays or additional mileage that the District's busses may incur. The DEIR does not address h

these potential impacts on the District. The DEIR should be revised to address these conditions. h

2. Noise Impacts – The DEIR provides a considerable amount of information relative to noise issues. However, there is no quantitative or qualitative analysis to identify the specific noise impacts associated with the operations of the Project following construction, or the impacts caused by the construction of the Project.

   The DEIR indicates that the Applicant shall prepare an acoustical analysis report and identify the impacts and mitigation measures that would be required prior to the issuance of any grading permit. This is not in compliance with CEQA which requires that the impacts be identified and mitigation measures be set forth in the DEIR. The Project's approval and the certification of the DEIR should be deferred until the noise impacts are address in an adequate manner in the DEIR. In addition, specific construction and operational noise impacts on the schools within close proximity to the Project should be addressed and mitigation measures provided. i

3. Mechanical Equipment Impacts - The DEIR states that the operation of the Project will require various mechanical equipment devises, including but not limited to pumps. The noise and vibration impacts of these equipment devises on the schools within close proximity of the Project should be evaluated and addressed in the DEIR, and the DEIR should be revised accordingly. j

4. Vibration and Noise During Construction – The DEIR does not address the potential vibration and noise impacts that may be experienced on properties within close proximity of the Project as a result of the construction activities. The DEIR should be revised to provide the analysis of these potential impacts, and the DEIR should be revised accordingly. k

5. Construction Traffic – The District is concerned that the construction traffic will have an adverse effect on the District in terms of creating hazardous conditions for pedestrian and vehicle movements of students to and from the schools within close proximity of the Project. Although the DEIR discusses traffic construction related impacts in a general sense, the DEIR does not address these potential impacts on the District's transportation programs. The DEIR should be revised accordingly. l

The District would also appreciate if the City and the Developer would consider the following request. The District is in need of a Maintenance, Operations, and m

Transportation facility (MOT). As such, the District is in search of a location where its current facility can be relocated. The District notes that the Project is on a portion of the site of the AES Huntington Beach Generation Facility, replacing the South and East Fuel Oil Storage Tanks, and the Distillate Fuel Storage Tank. The District also notes that two additional fuel storage facilities are not in use. These include the West and North Fuel Oil Storage Tanks. The District is in need of approximately three acres for its MOT facility.

It appears that a portion of the property where the West and North Fuel Oil Storage Tanks are located would be an appropriate location for the MOT facility. It appears that this area consists of between 8-10 acres. Access to this area could be provided from Newland Avenue or Edison Avenue. m

As such, the District would request that the City and the Applicant of the Project consider further discussions with the District that would lead to a portion of the AES site being developed by the District into an MOT facility, and that this additional development be coordinated with the development of the Project.

The District appreciates the City's and Applicant's cooperation and consideration of the concerns raised herein by the District. The District looks forward to the revisions of the DEIR on the Project and the continued relationship between the City and the District. n

Thank you for your consideration and assistance. We would appreciate if you would contact us to schedule a meeting to discuss the District's concerns and requests.

Sincerely,

Jerry Buchanan
Assistant Superintendent
Administrative Services

Cc: Huntington Beach City School District - Board of Trustees
Mr. Marshall B. Krupp, Community Systems Associates, Inc.

Response No. 12

Huntington Beach City School District
Administrative Services
Jerry Buchanan, Assistant Superintendent

12a. These paragraphs provide a summary of the project description and provide information on the locations of schools within their jurisdiction. No response is necessary.

12b. The student generation rate of .0000356882 provided in Section 4.6, *PUBLIC SERVICES AND UTILITIES*, of the Draft EIR is applicable to the Huntington Beach Union High School District. State law provides mitigation for the impact of development approvals on schools. The State School Facilities Act, as revised with adoption of Senate Bill (SB) 50, declared that financing of school facilities and the mitigation of impacts of land use approvals on the need for school facilities are matters of statewide concern. Enaction of SB 50 and Proposition 1A provided a comprehensive school facilities financing and reform program by, among other methods, authorizing a $9.2 billion school facilities bond issue, school construction cost containment provisions, and an eight-year suspension of the Mira, Hart, and Murrieta court cases that previously guided mitigation of school impacts.

School districts are authorized to levy school impact fees that are set by the State Allocation Board and tiered to allow districts to impose increasingly higher fees if certain criteria are met. The level 1 fee for residential uses presently stands at $2.14 per square foot and $0.34 per square foot of commercial construction.

As the questionnaire response letter dated October 24, 2001 by Mr. Frank Blonska of the Huntington Beach City School District (HBCSD) indicated that no students would be generated by the proposed project, no student generation rates were provided in the Draft EIR for HBCSD. However, the applicant will be required to pay all applicable mitigation fees to all affected school districts to offset the generation of any students as required by local and state law.

12c. As stated in Response 12g, the applicant will pay all applicable school impact mitigation fees as required by local and state law in order to offset the generation of any new students. Also refer to Response 12b, above.

12d. The information provided in Section 4.6, *PUBLIC SERVICES AND UTILITIES*, in the Draft EIR for Huntington Beach City School District is based on information provided within the questionnaire response letter dated October 24, 2001 by Mr. Frank Blonska of the HBCSD (Appendix J of the Draft EIR). The questionnaire response letter states that "no assessment fees or other school mitigation measures are required", and that a "desalination plant will generate no students". However, in compliance with local and state regulations, the applicant will pay all applicable school impact mitigation fees to offset any impacts.

12e. The mitigation fee of $0.1287 was based on information provided by the Huntington Beach Union High School District. As the questionnaire response letter dated October 24, 2001 by Mr. Frank Blonska of the Huntington Beach City School District (HBCSD) indicated that no assessment fees or other school mitigation measures are required, no impact mitigation fee for the HBCSD were included.

12f. Refer to Response 12g, below.

12g. Mitigation Measure PSU-1 within Section 4.6, *PUBLIC SERVICES AND UTILITIES*, of the Draft EIR, has been modified as shown in Section 3.0, *ERRATA*.

12h. As stated in Section 4.9, *CONSTRUCTION RELATED IMPACTS*, a Traffic Management Plan (TMP) will be prepared for the pipeline implementation phase of the proposed project in order to mitigate impacts to less than significant levels. TMP measures include the use of plating to reopen travel lanes during peak traffic hours as well as maintaining access to adjacent uses. The TMP would also include a City-approved truck routing plan and would allow for nighttime construction in congested areas if necessary. In addition, trenchless construction would be utilized to cross roadways highly sensitive to traffic, including Brookhurst Street.

12i. The questionnaire response letter dated October 24, 2001 by Mr. Frank Blonska of the HBCSD indicates that the closest schools to the project site are 1.5 miles away. As stated within Section 4.5, *NOISE*, of the Draft EIR, long-term operation of the proposed project is anticipated to result in noise generation of 60 dBA at the nearest surrounding sensitive receptors. When accounting for noise attenuation provided by intervening structures, topography, and on-site structures, noise levels are expected to be below City thresholds as defined in the City of Huntington Beach Municipal Code (Chapters 8.40.050 and 8.40.070). In addition, all construction activities associated with the proposed project (including construction of the proposed pipeline) would be in compliance with the City Municipal Code, per the TMP prepared for the project. No mitigation measures beyond those provided in the Draft EIR are necessary.

12j. Refer to Response 12i, above. In addition, on-site mechanical equipment would be secured and maintained so as not to generate a significant amount of vibration.

12k. As stated within Section 4.9, *CONSTRUCTION RELATED IMPACTS*, of the Draft EIR, prior to the initiation of construction for the proposed project, a truck routing plan subject to the approval of the City of Huntington Beach and other affected jurisdictions will be required. The truck route utilized will minimize impacts from noise, potential vibration, and traffic hazards to sensitive receptors to the maximum extent feasible. In addition, as stated within Section 4.9 of the Draft EIR, *CONSTRUCTION RELATED IMPACTS*, the construction process would comply with all applicable City standards in regards to noise. Vibration caused by construction equipment (jackhammers, pile drivers, etc.) would be short-term in nature (typically periods between two to four weeks) and would be subject to requirements as contained within the City's Municipal Code. Impacts in this regard would be less than significant.

12l. Refer to Response 12k, above.

12m. This comment concerns a HBCSD proposed project that is separate and distinct from the desalination plant project. There is no requirement for the applicant to set aside a portion of the desalination plant for development of a Maintenance, Operations, and Transportation (MOT) facility by the HBCSD. According to the questionnaire response letter dated October 24, 2001 by Mr. Frank Blonska of the HBCSD, "no assessment fees or other school mitigation measures are required" because the "desalination plant will generate no students." In addition, development of a MOT facility by HBCSD may result in numerous environmental impacts to the surrounding area over and above those identified in this Draft EIR including, without limitation, long term traffic, air quality and noise impacts.

12n. This text provides a conclusion to the comment letter, and does not require a response.

COMMENT 13

HUNTINGTON BEACH
WETLANDS CONSERVANCY
A Nonprofit Corporation

P.O. Box 5903
Huntington Beach, CA 92615
(714) 963-2123

November 2, 2002

Mr. Ricky Ramos
Associate Planner
City of Huntington Beach
2000 Main Street
Huntington Beach, Ca 92648

RE: EIR Study concerning Poseidon Desalinization Plant

Dear Mr. Ramos;

We are in receipt of and have reviewed the EIR Study concerning the Poseidon Desalinization Plant. We would like to make you aware of a concern we have regarding the accuracy of some of the information in the report. a

Our concern is in regards to Appendix C, and specifically information on page C-37 in regards to Talbert Marsh. We, the Huntington Beach Wetlands Conservancy, own and maintain Talbert Marsh. We are extremely familiar with the marsh and monitor it year round. The description of the marsh in Appendix C appears to indicate that the sand spit at the inlet to the marsh builds up and effectively closes off tidal flow during the summer months. This is not an accurate statement. The sand spit does build up more over the summer months, but it never completely closes. In fact, during all but the lowest of tides, there is constant water flow in and out of the inlet. The marsh is a healthy body of water, with direct tidal access year round, and is in no way stagnant as indicated in the description. b

In addition, we wish to remind you that we own land (restorable wetlands) immediately adjacent to the proposed project site and we should thus be included in any notifications from the city relating to the project. c

Thank you for your consideration, and the correction of the inaccuracy.

Sincerely,

Gordon W. Smith, Ph.D.
President and Chair, Board of Directors
Huntington Beach Wetlands Conservancy

Response No. 13

Huntington Beach Wetlands Conservancy
Gary Gorman, Project Manager

13a. This paragraph serves as an introduction to the comment letter and does not require a response.

13b. The Huntington Beach Wetlands Conservancy suggests that the marsh is "healthy" and "in no way stagnant". However, the Santa Ana Regional Water Quality Control Board (RWQCB) has recommended that the Talbert Marsh & Channel (between Magnolia and Newland) be designated as an impaired water body and has added it to the Clean Water Act Section 303 (d) list. In addition, the Orange County Sanitation District (OCSD) has monitored marsh water quality and found bacteria levels to be 100 times in excess of the maximum allowable levels for human skin contact.[28] The reason the marsh has tested high in bacteria levels is that it is not always open to complete tidal flushing (access) year round. There is a difference between the inlet looking visually open and being functionally open. The inlet often looks open because pumped diversion flow into the marsh keeps it full to overtopping of the inlet spit. This trickling overtopping flow is not the equivalent of tidal exchange and consequently does not remediate the bacteria blooms within the marsh. Typically when the sand spit at the inlet shoals to elevations that restrict exchange of 90 percent or more of the potential tidal prism, then the marsh is functionally closed. In this condition, there still is a visual perception that tidal exchange is occurring (involving the remaining 10 percent of potential tidal prism) but this degree of exchange is not sufficient to keep pace with the oxygen demand of the marsh's food web. As a result, blooms of anaerobic bacteria ensue, as the montoring data have indicated. Furthermore, a research paper by the designers of the present Talbert Inlet structures acknowledges that the design involved a compromise that was intended to allow infrequent closures in order to promote littoral transport by the inlet.[29]

13c. Comment noted. No response is warranted.

[28] OCSD, 2000 and 2001.
[29] Liedersdorf et al, 1992.

IRVINE RANCH WATER DISTRICT 15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

November 1, 2002

VIA FAX (original by mail)

Mr. Ricky Ramos
City Of Huntington Beach
Planning Department
2000 Main Street
Huntington Beach, CA 92648

Re: Draft Environmental Impact Report No. 00-02
Proposed Poseidon Seawater Desalination Project

Dear Mr. Ramos:

The Irvine Ranch Water District (IRWD) has reviewed the DEIR for the Poseidon Resources Seawater Desalination Project. IRWD is supportive of efforts to develop a cost-effective seawater desalination water supply to augment and bolster Orange County's water supply mix. However, IRWD will be significantly impacted by the proposed project and therefore is keenly interested in its development and offers the following comments. a

Our review of the subject DEIR has found it to be inadequate in several respects. Our comments pertain to the issues affecting public services and utilities. In particular, our comments fall into two main categories, project description/system reliability and water quality. Our comments follow.

PROJECT DESCRIPTION AND SYSTEM RELIABILITY

Overview. The DEIR notes that the proposed project would deliver product water from the proposed seawater desalination plant into the East Orange County Feeder No. 2 system in a reverse direction via a new connector pipeline and use of the existing OC-44 pipeline. A booster pumping station would also be constructed at the junction of Reach 4 of the EOCF#2, OC-44 and the Irvine Cross Feeder connection. We note that this location is in a sensitive habitat area. b

Based upon our preliminary review and discussions with the MWDOC and MWD, the proposed project as now configured appears to be technically infeasible. Our comments on system reliability address technical issues. Our analysis suggests that an additional pipeline and new point of interconnection will be necessary to accommodate project water in a reverse flow direction into the EOCF#2 Feeder. In addition, due to adverse water quality impacts that are discussed below, the proposed treatment process appears to be inadequate. Additional treatment will be required if the product water supply is to be delivered into the EOCF#2 system from which IRWD receives a significant quantity of imported water supply. c

Additional engineering work is necessary to properly develop the seawater desalination facility and conveyance system for integration into the imported water distribution system. As currently described in the project description, the project appears to be fatally flawed. Additional facilities will require further environmental review for impacts that have not been addressed in this DEIR. c

Hydraulic Design Constraints. Backfeeding the EOCF#2 system with a new booster pumping station will require a higher hydraulic gradient at the lower end of Reach 4 of the EOCF#2. It is our understanding that this pipeline was designed with a falling head HGL. The DEIR needs to address the structural integrity of the pipeline under the proposed reverse flow, higher pressure operation. We estimate that a discharge HGL of 558 feet would be required to move 50 mgd (78 cfs) to the Coastal Junction PCS in order to meet the design HGL of 528 at that location.

This will require analysis and verification by MWD. The higher head system will likely exceed the pipeline design for normal operation and surge pressure design allowance. If this is the case, the current configuration is unacceptable. To remedy this, an additional connecting pipeline may be required tie into the CM-10 turnout located just upstream of the Coastal Junction Pressure Control Facility. d

Hydraulic surge control is inadequately addressed in the DEIR. This is a significant area of concern and it requires full analysis in the DEIR, with any hydraulic control structures and system control facilities described and assessed.

Surge Control Constraints. With the conversion of the San Joaquin Reservoir to reclaimed water storage by IRWD, the reservoir is no longer hydraulically connected to the EOCF#2 pipeline. At this time, MWD is working with IRWD to develop a surge relief facility that would use an air gap for surge releases into the reservoir. The planned set point for the relief system is 485 feet. The proposed booster pumping station to backfeed reach 4 of the EOCF#2 would result in pumping water into the reservoir. Consequently, under the planned surge control system, the as proposed integration of the desalinated supply into the EOCF#2 is unworkable. e

Operational Reliability. Operational reliability is an issue, should a power or other emergency shutdown of the desalination system and booster pumping stations occur. It is our understanding that the operation of the Santiago Creek and Coastal Junction Pressure Control Stations have limited automatic remote control flow capacity operation capability. The control valves apparently require manual adjustment for large changes in flow. The project flow rate of 78 cfs likely exceeds the remote operation capability. The DEIR should describe what additional modifications would be required in these facilities to accommodate a rapid shutdown from the desalination project and with the environmental impacts accordingly addressed for any necessary improvements. f

Since the proposed desalination project is located near the Newport Fault on generally poor soils, the risk of outages due to a rupture on this segment of the fault and mitigation measures needs to be more fully described in the DEIR. This introduces an additional level of risk to the regional g

system reliability and this risk should be compared to the current level of risk in the existing system. g

WATER QUALITY

Sodium and Chloride Constraints on Water Reuse. Table 4.6-1 in the DEIR lists the expected concentration of several constituents in the product water quality. Product water quality shown appears to be the permeate quality, based on the low calcium and magnesium concentrations that are shown. Consequently, this table does not show the finished water quality post lime stabilization and caustic soda pH adjustment. The finish water quality needs to be shown for all constituents. h

Table 4.6-1 shows the product TDS to be 350 mg/l, sodium to be 150 mg/l and chloride to be 190 mg/l. The current sodium and chloride levels received by IRWD from MWD sources are in the 65-85 mg/l range. IRWD operates a major dual reclamation system. The reclamation system user profile and NPDES permit limits recycled water supply sodium to 125 mg/l and chloride to 150 mg/l. The DEIR does not describe the quantity or seasonal variation of desalinated seawater supply deliveries to each of the affected agencies over the course of a year. MWDOC has provided information that indicates IRWD will receive on average about one-half the proposed project flows. Consequently, IRWD will be significantly impacted by the proposed project. At these flow rates, the proposed desalinated water supply will cause sodium and chloride levels in IRWD's recycled supply to substantially violate our NPDES permit for both constituents. This would be an unacceptable condition. i

The proposed treatment process for the desalination project will need to be adjusted to match sodium and chloride levels to those levels currently received from MWD if this water is to be introduced into the EOCF#2 system at points of connection where IRWD receives MWD imported water.

Customer Acceptance. We anticipate consumer taste complaints due to the significantly higher proposed sodium and chloride concentrations in the finished water. Furthermore, commercial and light industrial customers who would be impacted by the change in water quality will need to be identified in the DEIR, including any pre-treatment issues. The EIR needs to more fully address public acceptance for use of desalinated water within the affected public water supply agencies. Consumer surveys, focus group process, and other methods should be utilized to ascertain public acceptance. Reliance on assumed acceptance is inadequate. j

Membrane Performance. The DEIR notes that the TDS to be produced from the proposed single pass RO system would be 350 mg/l. As membranes age, salt passage may increase as much as 10% annually. The cause and control of this potential deterioration rate should be described in the DEIR and potential changes in permeate quality described. The type of membrane should be identified with a manufacturer's analysis in an appendix in order to justify the predicted permeate water quality. k

Water Stabilization and Corrosion Control. A more in-depth discussion of potential corrosion, corrosion control and water stabilization chemistry issues on the each of the receiving water supply agencies needs to be addressed in the DEIR. The current discussion lacks sufficient technical foundation. IRWD needs to be consulted to review the stabilization formulation in order to be satisfied that lead and copper rule requirements will be met. l

Trace Contaminants. The DEIR discusses "Red Tides" and neurotoxins that originate from plankton blooms. The DEIR cites one reference as the authority on stating that the RO system will safely remove any neurotoxins in the source water. The DEIR needs to more fully discuss the issue, identify the types of neurotoxins and frequency of occurrence in coastal waters, address concentrations found in the water column during severe blooms, and provide more substantial documentation of their removal by the proposed treatment process. A second unit treatment process to destroy any trace neurotoxins or other problematic trace organic that may pass through membranes may need to be considered to provide adequate water quality assurances. m

Finished Water Quality Monitoring. Since a private entity will be operating the project, the water quality control system and water quality monitoring and control program need to be described. This control system needs to be fully protective of public water suppliers. The null zone, the point in the pipeline where imported water and desalinated water meet, will move throughout the pipeline with varying demand conditions. This may cause significant fluctuations in water quality over short periods at affected points. This impact needs to be addressed. n

SUMMARY

We appreciate the opportunity to provide comments on the DEIR for the Poseidon Resources Seawater Desalination Project. As stated above, it is our considered opinion that the proposed project is deficient in two major respects: (1) the proposed method of integration into the regional imported water distribution system is infeasible and (2) the finished water quality is unacceptable since it will cause violation of water recycling permits. Additional work needs to be developed and completed on the proposed project to be deemed feasible. o

IRWD is one of several participants who own capacity in the EOCF#2 system and approvals from each of the participants is required before any modifications to the system and its use can be made. p

We note that IRWD was not on the original distribution for the DEIR. We would appreciate IRWD being added to your mailing list for all future notices of meetings and distribution of reports regarding the subject project. Other affected agencies may have also been excluded from the original distribution and thereby either not afforded an opportunity to comment on the DEIR or provided inadequate time for review and comment. Affected water supply agencies are those who receive water supply from the Metropolitan Water District of Southern California (MWD) and Municipal Water District of Orange County (MWDOC), through the Orange County Feeder and East Orange County Feeder No. 2 Feeder pipelines. q

We are requesting that the current version of the project description and the DEIR, which we consider to be inadequate, be substantially modified so as to present a fully developed and technically feasible project. We request that the City of Huntington Beach not certify the DEIR in its current form and require Poseidon Resources to further develop the project, conduct and provide sufficient technical analyses supporting key aspects of the project impacts as described above, revise the DEIR accordingly, and re-circulate for comments. r

If you should have any questions or need additional information, please contact the undersigned at (949) 453-5582 or via e-mail at bell@irwd.com. s

Very truly yours,

Richard B. Bell, P.E.
District Manager for Planning and Resources

cc: K. Seckel, MWDOC

F:/grm/wrd/eng/rbb/poseidon.doc

Response No. 14

Irvine Ranch Water District
Richard B. Bell, PE, District Manager for Planning and Resources

14a. These introductory paragraphs provide an overview of comments found in the agency's letter. No response is required.

14b. This paragraph provides a summary of the water conveyance pipeline and underground booster pump station aspects of the proposed project, and does not require a response.

14c. Refer to Response 14d, below.

14d. A preliminary distribution system model was developed by Carollo Engineers prior to the distribution of the Draft EIR to explore whether or not the project would result in significant adverse impacts on regional water transmission facilities. Although hydraulic characteristics of the system would be affected, the Draft EIR indicated that there would be no significant impacts to the regional system (Draft EIR at pp. 4.6-17 and 4.6-18). The Draft EIR also indicated that "Additional modeling will be performed during the design phase of the project to confirm that the proposed project will not have significant impacts on regional water transmission facilities" (Draft EIR at p. 4.6-18). As requested by this and other comments, Carollo Engineers has engaged in discussions with Metropolitan Water District, Municipal Water District of Orange County and Irvine Ranch Water District to clarify system pressure parameters concerning the East Orange County Feeder #2, the Coastal Junction, and associated delivery pressures required. Those discussions have already led to refinements in the distribution system model (the revised model is attached to this Response to Comments packet as Appendix B, *COMPUTER MODELING RESULTS – PRC WATER DELIVERY MODEL*). The model results still show a need to boost the water pressure at the OC-44 and the EOCF#2 connection as stated in the Draft EIR, but indicate that the boost should be at a lower pressure due to the EOCF #2 pipeline pressure limitations. Consequently, an additional underground underground booster pump station will be required on the distribution system, located at Coastal Junction (see below for further discussion). This modification does not change the conclusion that no significant impacts will result to the regional system. An updated Distribution System Modeling Report will be prepared and delivered to affected water agencies and a series of technical workshops will be held to discuss hydraulic operational issues with interested parties. The updated Distribution System Modeling Report will include a surge control study which will analyze the location, magnitude and measures needed (including specific hydraulic integration provisions) to ensure the protection of the regional distribution system should a surge event occur. Some surge protection measures to be studied are surge suppression valves, air compression tanks, pressure relief valves, and fly wheels on the pumps. As indicated in the Draft EIR (page 4.6-18), this level of review and analysis is required as part of the design review process and "will be performed during the design phase of the project."

The additional Coastal Junction underground pump station would be placed underground within the parking lot at St. Paul's Greek Orthodox Church, located at 4949 Alton Parkway within the City of Irvine (refer to Exhibit 3, *COASTAL JUNCTION PUMP STATION LOCATION MAP*). The underground pump station would be constructed within the north/northwestern portion of the church parking lot, in an area used for both parking and volleyball activities. The site is surrounded by the St. Paul's Church to the south, the Woodbridge Village Association facility to the west, an apartment complex to the east, and open space to the north. The footprintof the proposed underground pump

station would be approximately 100 feet by 100 feet, and would require a construction easement of 125 feet by 125 feet. The pump station would be entirely underground except for a small pipe vent and a ground-level steel access door for maintenance (the access door would not impede parking after construction). It should be noted that St. Paul's Greek Orthodox Church has been contacted by the applicant and has issued a statement of interest for the underground pump station site (refer to Exhibit 4, *ST. PAUL'S GREEK ORTHODOX CHURCH – STATEMENT OF INTEREST*.

No long-term operational impacts are anticipated as a result of implementation of the Coastal Junction pump station, as the facility would be completely underground and would not interfere with operations or parking at the church, nor would it impact adjacent sensitive receptors. Short-term construction-related impacts would primarily result from disruption of church facility parking and impacts to the residential use to the east. Impacts to church parking are not anticipated to be significant, as ample parking is available (approximately 276 parking stalls) even on Sunday mornings with the volleyball court (which the pump station would be placed under) active. As stated above, an apartment complex is situated approximately 400 feet east of the proposed underground pump station site. Residents of this complex may be affected by noise and aesthetic impacts of the construction process. However, all such impacts would be short-term in nature, and the construction process would comply with all local requirements (such as limited hours of construction, aesthetic screening, noise attenuation of mechanical equipment, etc.). As the site is situated in a highly urbanized area, impacts to biological resources are not expected. Upon adherence to local construction standards, short-term impacts to sensitive receptors surrounding the site are not anticipated to be significant.

It should be noted that an alternative Coastal Junction underground pump station location was evaluated for the proposed project. This site is adjacent to St. Paul's Greek Orthodox Church, within the parking lot of Irvine United Church of Christ located at 4915 Alton Parkway. Although this site is an operationally feasible location for the underground pump station, the short-term construction process would create a substantial shortage of parking for the church, as the Irvine United Church has only approximately 135 parking stalls. As such, the St. Paul's Church location is the preferred location for the Coastal Junction underground pump station.

14e. The desalination project's underground booster pump station planned to be located in the area of the San Joaquin Reservoir will have a maximum hydraulic grade of 485 feet, to meet the design requirements of the existing pipework. Thus, the surge relief set point as planned by Irvine Ranch Water District will be suitable for the proposed underground booster pump station arrangement, and water should not continuously discharge.

14f. The proposed system would leave the existing Coastal Junction Control station active, so that this facility could operate in the event of a decrease in flow from the underground booster pump station. Any modifications to the automatic operation of the Coastal Junction Pressure Control station to deal with decreased flow would be within the existing facilities, such as modifications to valve operation and/or the SCADA system. The same would apply to the Santiago Creek Pressure Control station.

14g. Data collected within Appendix A of the Responses to Comments, *PRELIMINARY SEISMIC ASSESSMENT*, suggest that the risk of surface faulting within site boundaries is a relative minimum. No mitigation measures beyond those provided within the Draft EIR are necessary.

14h. The assumption that Table 4.6-1 reflects desalination permeate water quality rather than product water quality is incorrect. Table 4.6-1 of the Draft EIR shows the average desalination plant product water quality after post-treatment and shows the plant water concentrations for all Primary and Secondary constituents regulated by the California Department of Health Services. Combination of lime and carbon dioxide will be used for permeate post-treatment. The effect of the addition of these two chemicals on the plant permeate is already reflected in the product water quality, shown in Table 4.6-1. Caustic soda will not be used for intake seawater or permeate treatment/pH adjustment. The specifications for post-treatment chemical additions are determined based on analytical and bench- and pilot-scale studies.

14i. The comment states that the permit limits for IRWD reclaimed water are 125 mg/L for sodium and 150 mg/L for chloride. Compliance with the limits is based on a flow-weighted average concentration of all reclaimed water sources. If half of the MWD water, as stipulated in the comment (of sodium and chloride levels of 65 to 85 mg/L) is replaced with desalinated water of sodium and chloride of 150 mg/L and 190 mg/L, respectively, then the sodium and chloride levels will still be below the NPDES permit limits. Taking into consideration that the desalinated water will be blended (50 percent/50 percent) with lower sodium and chloride MWD water, the average sodium concentration of the blended water IRWD will receive will be 118 mg/L (which is less than the NPDES limit of 125 mg/L). The chloride concentration will be 138 mg/L (which is less of the NPDES limit of 150 mg/L). In order for the 50/50 blend of MWD and desalinated water to exceed the NPDES limits, the desalination plant water sodium and chloride levels would have to be higher than 165 mg/L and 215 mg/L, respectively. The desalination plant sodium and chloride levels will be maintained below these values. Compared to conventional water treatment plants, desalination plants have means of controlling the product water quality in terms of sodium and chlorides and maintaining the above-mentioned maximum target levels of these constituents independently from seasonal variations of seawater quality or product water quantity. In addition, a review of ocean water quality data in the vicinity of the power plant intake indicates that intake seawater concentration variations in terms of TDS, sodium and chloride are very limited. Seawater quality does not change significantly seasonally or annually as compared to surface water or groundwater. The only substantial changes are triggered by rain events, which are sporadic and of limited occurrence in this area. Rain events will only have a beneficial effect on the seawater sodium and chloride content, temporarily lowering values by up to 10 to 15 percent.

14j. The Draft EIR addresses the physical impacts associated with the use of desalinated water. CEQA does not require an analysis of public acceptance or similar social impacts unrelated to a direct, physical impact to the environment.

14k. The TDS product water quality estimate of 350 mg/L is based on the use of high-rejection seawater desalination membranes at the second year of desalination plant operations. Typically, during the first two years of plant operations, the average product water quality TDS concentration will be lower than 350 mg/L. After the second year of operations, a portion (typically 10 to 15 percent per year) of the desalination plant membrane elements would be replaced to maintain the product water quality close to the target TDS concentration of 350 mg/L. Membrane replacement is a standard approach commonly used in seawater desalination plants to maintain product water quality at a long-term steady target level.

The desalination plant will use standard eight-inch desalination membrane elements that are available from a number of specialized membrane manufacturers. The membrane element manufacturers and their products pre-qualified for this project are:

- Hydranautics (SWC3 or better)
- Filmtec/Dow (SW30HR-380 or better)
- Koch/Fluid Systems (TFC2822SS or better)
- Toray (SU820L or better).

Key design membrane element parameters common for the products of these suppliers are:

- Membrane Type: Spiral-wound, thin film composite;
- Applied Flux: eight to 12 gpd/sf at recovery rate of 45 to 50 percent;
- Nominal Salt Rejection: 99.6 percent or higher;
- Applied Pressure: 800 to 1,100 psi;
- Maximum Pressure Drop per Element: 10 psi;
- Maximum Feed Water SDI (15 min): 5.0;
- Free Chlorine Resistance: less than 0.1 mg/L;
- Operating pH Range: 2 to 11;
- QA/QC Membrane Production and Testing Procedures.

The actual membrane element that will be used for the desalination plant will be selected during the detailed engineering design phase of the project. Manufacturer's analysis of product water quality and membrane performance for two of the four membrane suppliers (Hydranautics and Toray) listed above is presented in Appendix E of these Responses to Comments. The product water projections are performed for two conditions: new membranes at plant start up and membranes at the second year of plant operations. All projections are completed for worst-case scenario conditions in terms of intake water salinity and temperature and membrane performance characteristics.

Analysis of the information provided in Appendix E of these Responses to Comments indicates that at the beginning of the desalination plant operation the TDS concentration of the RO system permeate is projected to be between 226 and 308 mg/L (based on Toray and Hydranautics projections, respectively, as shown in Appendix E of these Responses to Comments). The permeate TDS concentration at the end of the second year of desalination plant operations is projected to be between 257 and 349 mg/L (based on Toray and Hydranautics projections, respectively). As previously indicated, the permeate water quality will be maintained at a second year operations level over the entire 30-year period of plant operations by replacement of a portion of the membrane elements every year. It should be noted that the projections above are for the water quality of the RO system permeate as it exits the desalination system. Prior to distribution, the desalination plant permeate will be conditioned by lime and carbon dioxide for stabilization and corrosion control, and with chlorine for final disinfection. The addition of these conditioning chemicals would increase the final product water TDS concentration by 30 to 50 mg/L. Therefore, at plant start-up the TDS of the product water delivered to the distribution system is expected to be in a range of 260 to 340 mg/L, while for the entire 30-year period of plant operations the TDS concentration will be in a range of 300 to 400 mg/L and will average 350 mg/L.

The projections presented above are developed using conservative assumptions for the type and performance of the membrane elements, intake water salinity and temperature. Previous pilot testing experience in Tampa and the actual performance of the same

Toray membranes in Trinidad indicate that the membrane manufacturer projections carry a safety factor of 10 to 15 percent and the actual product water quality is better than that projected by the software.

Advances in membrane technology over the next 30 years are expected to yield membrane elements capable of producing water of TDS concentration below 300 mg/L for most of the useful life of the desalination facility. Therefore, the projected product water TDS concentration of 350 mg/L, presented in the DEIR, is a reliable and conservative estimate of the potable water quality that will be delivered to the distribution system by the desalination plant.

14l. The Draft EIR is not required to address detailed issues of water chemistry. However, technical reports on issues pertaining to water chemistry and related subjects are being prepared and will be made available to receiving water agencies. The first such paper on corrosion control strategies was provided to agencies attending the project workshop held at the Municipal Water District of Orange County (MWDOC) on February 13, 2003. It is anticipated that the next report covering operating issues related to disinfection byproducts will be available by early summer, 2003.

14m. The Draft EIR states that the toxins associated with potential red tide/algal bloom episode(s) in the waters around the plant intake will not pass through the various treatment processes. The information contained in the Draft EIR indicates that the proposed treatment process (chemical coagulation, flocculation, filtration, reverse osmosis and free chlorine) will remove/destroy the algae particles and associated biotoxins, if present in the water. Although there are many ocean water desalination plants operating worldwide, there are no cited reports of toxin problems associated with ocean water desalination treatment facilities.

14n. The applicant will apply for a Domestic Water Supply Permit from the California Department of Health Services pursuant to the Regulations Relating to Domestic Water Systems. This includes the submission of:

- A Water Quality Emergency Notification Plan (ENP);
- An Engineering Report describing how the proposed new facilities will comply with the treatment, design, performance and reliability provisions of the Surface Water Treatment Rule (SWTR); and
- Plant operations plan.

Permit provisions for similar projects typically include:

- Submittal of plans and specifications for Department approval prior to construction;
- Compliance with the Surface Water Treatment Rule (SWTR) – including the treated water turbidity, disinfection residuals and CT levels;
- All water must be treated – no bypassing;
- Complete water quality analyses conducted by an approved laboratory;
- Adequate corrosion control;
- Updated watershed sanitary survey every five years;
- Mandatory use of ANSI/NSF approved chemicals;
- Raw water bacteriological monitoring;
- Certified treatment plant operators; and
- Submission of monthly operation reports and a report after the first year of operation detalling the effectiveness of the plant's performance, a list of any violations and a list of any needed additions or operational changes.

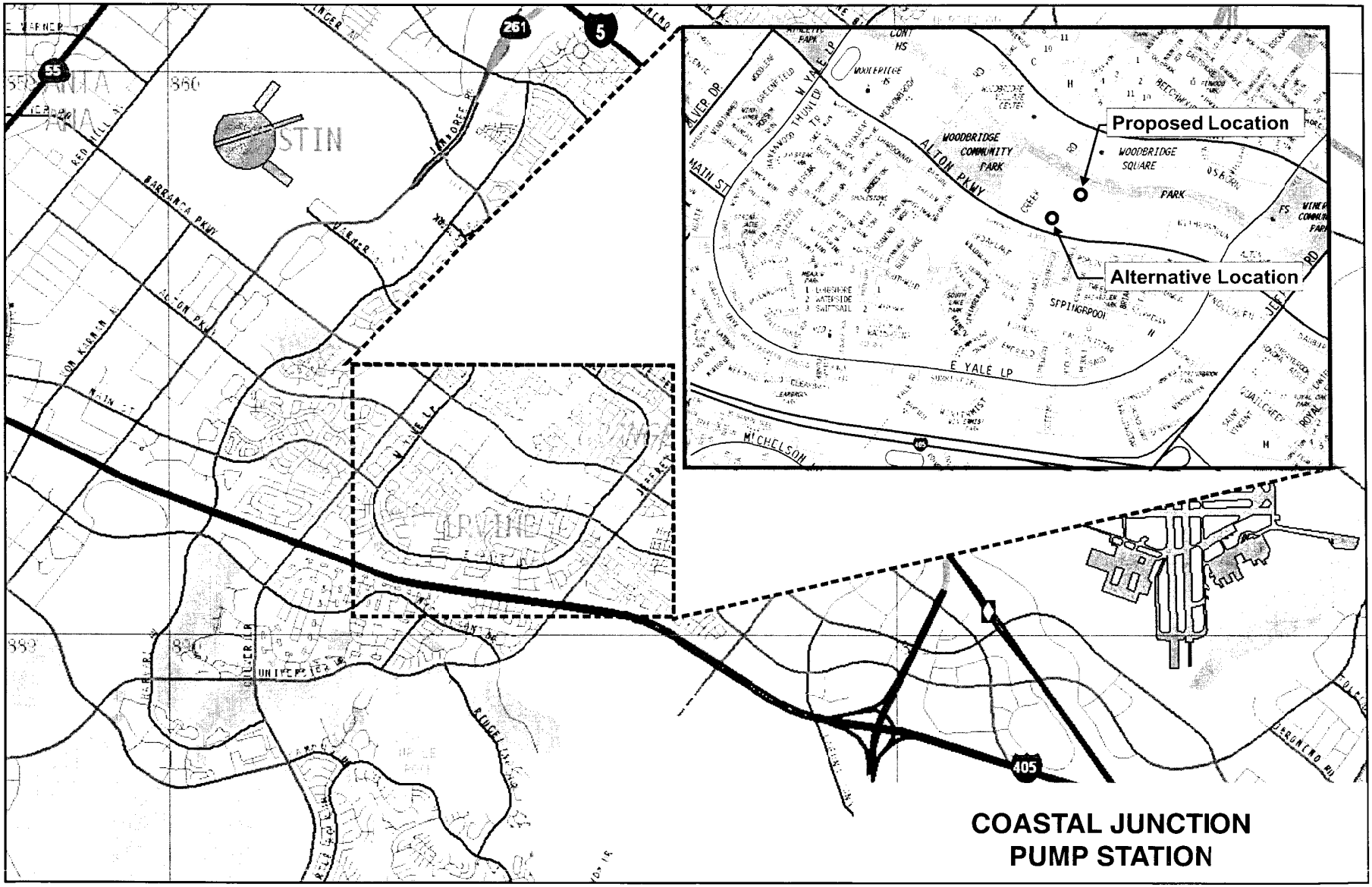
14o. This paragraph summarizes comments provided by the agency in the letter, and does not warrant a response.

14p. As stated with Section 3.0, *PROJECT DESCRIPTION*, of the Draft EIR, the applicant shall obtain all necessary institutional agreements from applicable cities, agencies, and regional water purveyors, including those who own capacity in the East Orange County Feeder #2.

14q. Comment noted. No response is warranted.

14r. Recommendations contained within the paragraph have been noted and will be utilized in the decision-making process for the proposed project. No further response is necessary.

14s. This paragraph contains contact information for the agency, and does not warrant a response.



Source: Carollo Engineers, January 2003.

RESPONSES TO COMMENTS - POSEIDON SEAWATER DESALINATION PROJECT

Coastal Junction Pump Station Location Map

Exhibit 4

RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION

08/02 JN 10-101409

Saint Paul's Greek Orthodox Church

Father *Steven P. Tsichlis*, Pastor

Father *Timothy Robinson*, Associate Pastor

Mr. *Dean Langis*, Pastoral Assistant

February 3, 2003

Billy Owens
Vice President
Poseidon Resources Corporation
3760 Kilroy Airport Way, Suite 260
Long Beach, Ca. 90806

RE: Proposal to Construct Underground Water Pump Station

Dear Mr. Owens:

This letter acknowledges St Pauls' consideration of the installation of an underground water pump station on the church's property. This letter is a non-binding statement of interest. In addition, the church consents to the identification of the church property (as described below) as a potential site for the pump station in the Environmental Impact Report (EIR) for the seawater desalination plant under review by the City of Huntington Beach.

Any commitment by the church to an easement agreement is subject to the negotiation of an agreement and approval by the appropriate church council. As compensation for the use of the property, Poseidon Resources will pay a fair market value for the property based upon an appraised value of the land and other considerations as agreed. The agreement will be subject to certain conditions precedent before both parties are committed, such as, receipt of all project permits for the desalination project, obtaining financing for the desalination project, receipt of City of Irvine approvals to construct the pump station, etc.

The proposed pump station easement will be 100 ft. by 100 ft. once it is completed. The preferred location is in the north, northwest corner of the church parking lot (in the current volley ball area), just east of the Woodbridge Village Association property. While the pump will be in an underground vault, a portion of the surface will provide both a pipe vent and a ground level steel access door for maintenance. The finished surface will be returned to grade level and parking can be resumed once the station is operational. Parking spots will be unavailable only during the construction period. The start of construction is not expected before the 4th quarter of 2004 or early 2005. During the construction period, Poseidon will need a construction easement approximately 125 ft. by 125 ft. Once construction is completed, the parking area will be returned to its original use. There will be no long term reduction of parking spots. Construction is expected to take twelve (12) months to complete.

Sincerely,

Steve Tibbs
President, Parish Council

Lee Lovato
First Vice President, Parish Council

EXHIBIT 5

4949 Alton Parkway • Irvine, California 92604-8404

COMMENT 15

LAGUNA BEACH COUNTY WATER DISTRICT

INCORPORATED 1925

October 28, 2002

Ricky Ramos
City of Huntington Beach
Planning Department
2000 Main Street
Huntington Beach, CA 92648

COMMENTS TO DRAFT ENVIRONMENTAL IMPACT REPORT NO. 00-02 FOR THE POSEIDON SEAWATER DESALINATION PROJECT

Dear Mr. Ramos,

In general, we believe that the construction of a desalination plant in Orange County will be a boost to water reliability for the region in years to come. However, as this project seems to be on a fast track for construction, it seems necessary to bring to the attention of the participants several concerns relating to the impacts to Laguna Beach County Water District (LBCWD) that were not addressed in the EIR. a

COMMENTS

1. Institutional issues should be worked on parallel to the EIR to eliminate project slowdown, such as coordination with other affected agencies. There may be direct environmental consequences to several public agencies as a result of this project. Currently many agencies within Orange County receive all, or a portion of, their potable water from Metropolitan Water District of Southern California (Met). If other agencies receive desalinated water that replaces Met water, they should be contacted and made a part of the EIR process to minimize any conflicts or delays as the project proceeds. b

2. The EIR does not mention the public agencies that will receive desalinated water and whether they were contacted or had any input. Which agencies will receive desalinated water? How much desalinated water will they receive? Have they agreed to take desalinated water? If LBCWD is to receive any desalinated water, we were not contacted for our comments regarding this project. c

3. What happens to the water currently being imported into Orange County from Met that will be displaced by the desalinated water? Is there going to be a water exchange? What are the details of the water exchange? d

4. If LBCWD receives desalinated water, how will this affect our reporting requirements to the Department of Health Services? How will this affect our reporting to the public through the annual Consumer Confidence Report? Will we have to report a new source of water to DOHS and prepare new maps for them? How will this additional work be funded? e

5. What happens if the plant goes off line, either suddenly or planned? Will Met make up the difference in flow? Will there be additional Met cost if it happens? Will the desalination plant be considered as a regional source that replaces Met flow that may be allocated elsewhere? f

6. If LBCWD receives desalinated water, who is selling it to us and how much is it going to cost, or will the water be considered Met water? g

7. If a drought occurs and MWD implements rationing, does LBCWD have to ration also, or will the use of desalinated water be considered separately. h

8. Which agency will be handling the distribution of the desalinated water and who will have jurisdiction over the plant? i

9. Who will be selling the water and to whom? j

10. Are Municipal Water District of Orange County or Met involved in this EIR process? The EIR does not state that they were contacted during the preparation of the EIR. If this is a regional project, then the regional water wholesalers should be in the process from the beginning. k

11. Will the hydraulics of the Aufdenkamp Transmission Main (ATM) and the Coast Supply Line (CSL) change? Currently these pipelines are regulated to maintain a constant flow and hydraulic gradient throughout. Where is the point of connection, if any, to these facilities? If it is downstream of the Coastal Junction, then surge protection and flow control must be added to the project. l

12. A drawing should be added to the EIR showing where the water will be distributed and what the hydraulic gradient is in the distribution system. m

Your consideration of these comments in the Final EIR will be greatly appreciated. If you have any questions regarding these comments, please contact our District Engineer, Jim Nestor, of this office. n

Very truly yours,

Renae M. Hinchey

Renae M. Hinchey
General Manager

cc: Stan Sprague, MWDOC
Mike Dunbar, SCWD
John Schatz, SMWD
Paul Jones, IRWD
Eldon Davidson, City of NB

Response No. 15

Laguna Beach County Water District
Renae M. Hinchey, General Manager

15a. This introductory paragraph of the comment letter does not require a response.

15b. The applicant has initiated an extensive coordination process with multiple potentially affected agencies. Efforts have been made to receive input from these agencies regarding the technical and environmental aspects of the project, much of which has been incorporated throughout the Draft EIR.

15c. As described on page 3-20 or the Draft EIR, the desalinated water produced by the proposed project will be blended with existing water supplies and delivered through the existing regional water distribution system that is operated and maintained by the Metropolitan Water District of Southern California (MWD). The California Department of Health Services (DHS) granted conceptual approval for the project's desalination facility to use reverse osmosis technology (refer to Response 8f, above). No wholesale water agreements between the applicant and potential water purveyor agencies have been reached and it is not anticipated that any such agreements will be reached until the design phase of the proposed project.

15d. Refer to Response 15c, above. Draft EIR Section 3.5, *PROJECT NEED AND OBJECTIVES*, explains the relationship between desalinated seawater produced by the project and the existing imported water supply provided by MWD. Along with conservation, imported water supplies, groundwater supplies and water recycling programs, seawater desalination is an important component for water resources within Orange County and the region.

15e. Refer to Response 16g, below.

15f. Refer to Responses 15c (above) and 16d (below).

15g. Refer to Response 15c, above.

15h. Laguna Beach County Water District (LBCWD) has the authority and discretion to implement its own water rationing plan during times of drought. Refer to Response 15c, above.

15i. Refer to Response 15c, above.

15j. Refer to Response 15c, above.

15k. The Municipal Water District of Orange County and Metropolitan Water District of Southern California have been provided input regarding impacts and design features. The applicant has met several times with both agencies.

15l. Refer to Response 14d, above.

15m. As end users for the proposed project's product water have not been identified, no drawing is provided. Also refer to Response 15c, above.

15n. This text provides a conclusion to the comment letter and does not require a response.

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

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November 1, 2002

Ricky Ramos
City of Huntington Beach Planning Department
2000 Main Street
Huntington Beach, CA 92648

Dear Mr. Ramos:

Subject: Comments on Draft EIR No. 00-02
Poseidon Seawater Desalination Project

The Municipal Water District of Orange County (MWDOC) has reviewed the draft EIR for the Poseidon Seawater Desalination Project. MWDOC is supportive of the efforts to develop additional local resources such as ocean desalination that will help to improve our water supply reliability to both the region and the local community. MWDOC is also directly involved with some of the implementation aspects of the project in getting the water introduced into the Orange County distribution system. We have had an opportunity to review the draft EIR and have comments in four particular areas as follows: a

1. Water Quality
2. Reliability of the Supply System
3. Hydraulics and Control
4. Permitting Coordination

1. **Water Quality** - The draft EIR does not completely address the issue of the potential water quality impacts of blending the desalinated ocean water with the water in the imported distribution system. The draft EIR does not specifically discuss how much of the product water will be introduced in the various pipelines and how the blend of desalinated ocean water and imported Metropolitan water will vary seasonally for the eleven retail agencies who could receive some of the project water. The draft EIR handles this issue by simply stating that "impacts in regard to water compatibility and product water quality are not anticipated to be significant." b

MWDOC believes that additional information should have been included in the draft EIR to discuss the water quality compatibility issue and demonstrate that problems will not develop in the regional pipelines, in the plumbing systems of local consumers or with respect to taste and odor issues. Many of the water quality and compatibility issues are currently being studied either by research being headed up by West Basin MWD (of which MWDOC is a partner) or by direct piloting work (Poseidon has started its pilot testing in Carlsbad and West Basin has started its pilot testing in Manhattan Beach). The current research efforts should be far enough along to be of benefit during the final permitting for the Huntington Beach ocean desalination plant by the

California Department of Health Services (DHS). A discussion of the permitting process and testing protocol for this project would be appropriate. b

Poseidon has provided copies of modeling work to MWDOC which indicates where the water will be distributed (pipelines and agency connections). This information has not been made available through the EIR process to the eleven or so potentially affected retail agencies who will receive a blend of ocean water and imported water. This information should be made available to all affected agencies. c

2. **Reliability of the Supply System** - Although the Draft EIR discusses facility foundation aspects to deal with liquefaction, it does not discuss the structural engineering and operational considerations to be designed into the treatment plant and pump station to ensure reliable operations in the event of seismic events. The treatment plant site is located 1.25 miles south of the Newport-Inglewood Fault Zone, with the South Branch Fault, a component of the Newport Inglewood Fault, traversing the northern portion of the treatment plant site. The site is also prone to liquefaction. The pump station site is within an area of potential liquefaction. An analysis should be presented on the structural and operational reliability of the system over the next 40 years and its ability to withstand and recover from seismic events. The review needs to consider other events that will cause potential outages to the plant and how water service will be maintained during these events. The on-site storage of 10 MG provides only about 5 hours of back-up supplies in the event of a treatment plant interruption; no provisions have been made in the event of a pump station or pipeline outage. There is an implied emergency service obligation from Metropolitan for 78 cfs (50 MGD) in the event the system goes down. Provisions need to be made on how to implement this system. d

3. **Hydraulics and Control** - The discussion of hydraulics and system integration does not appear to be complete. On page 4.6-17 it states "it is assumed that all facilities discussed below have design features to prevent hydraulic surges." The operation of the pump station and pipeline connecting into the regional systems, when shut down suddenly due to power outages or other events, has the potential to cause a significant surge to the regional facilities including the OC-44 pipeline. It is incumbent on the connecting system to ensure protection of the existing systems. In the event the existing facilities are damaged by a surge event, agencies could be without imported water for their consumers. The potential surge events need to be analyzed and mitigated. e

In addition, MWDOC has suggested a review and coordination of the hydraulic information on Reach 4 of the EOCF#2. This section of pipe f

was designed with a falling HGL, meaning that the pressure class of the pipe is lower at the southern end compared to the northern end, whereas the operation of pumping the desalinated ocean water back into the system will result in a higher pressure at the southern end of the reach and a lower pressure at the northern end. The operation of the proposed system needs to ensure that the design standards of the pipeline are not exceeded either under normal operations or during surge events. The control strategy for pumping into the EOCF#2 should also be reviewed. f

4. **Permitting Coordination** - The permitting process for the Poseidon desalination plant needs to include all systems and agencies who could receive some portion of the desalinated ocean water. The agencies who are currently recognized by DHS as having water system numbers will have to complete a permit amendment to get approval for a "new source of water." It is envisioned that Poseidon will provide all the technical work to satisfy the requirements. Systems such as the Joint Regional Transmission System, operated by South Coast Water District, would require a permit amendment, as would Laguna Beach CWD, Mesa Consolidated WD, Metropolitan and possibly others. Agencies who already receive water from these facilities will probably not have to seek amended permits. The intention throughout the permitting process should be to ensure that any agency whose water is affected will have an opportunity to voice their concerns. To assist in this effort, it is recommended that stakeholder meetings be held during the permitting for the project. g

Thank you for the opportunity to review and comment on the draft EIR. We look forward to development of the final EIR. h

Sincerely,

Karl W. Seckel, P.E.
Assistant Manager/District Engineer

cc: MWDOC Board of Directors
MWDOC Member Agencies

Response No. 16

Municipal Water District of Orange County
Karl W. Seckel, PE, Assistant Manager/District Engineer

16a. This introductory paragraph of the comment letter does not require a response.

16b. The issuance of a permit by State Department of Health Services (DHS) for the desalination plant will depend on a demonstration that the plant can be operated in a manner consistent with regulatory requirements and that the quality of the product water complies with all the relevant standards governing domestic water supply as specified in Title 22 of the California Code of Regulations. These water quality standards include both health-based and aesthetic considerations in the form of primary (health-based) and secondary (aesthetic) standards. The permit applicant will demonstrate through bench-scale and pilot- scale experiments already underway, that plant operational procedures exist, in the form of post-RO stabilization that will allow desalinated water to be blended with imported water and groundwater in such a way as to produce aesthetically acceptable water. See Responses 8g and 14n, above.

16c. The "modeling work" referenced in this comment was provided in Appendix G, *PRELIMINARY PIPELINE ASSESSMENT*, of the Draft EIR.

16d. The Draft EIR requires that a site specific seismic analysis be completed prior to issuance of a grading permit (Draft EIR Page 4.2-13, Mitigation Measure GEO-8.) GeoLogic Associates have recently completed a Preliminary Seismic Assessment for this project (refer to Appendix A to these responses). The results of this preliminary study indicate an absence of evidence that faulting has ever occurred at the plant site and that the risk of future surface faulting at the desalination plant site is minimal. The Preliminary Seismic Assessment has determined that the maximum ground acceleration for the Maximum Credible Earthquake (MCE) for this site is 0.535 g. An earthquake of magnitude 6.9 on the Newport Inglewood fault was considered to be the MCE for the site. The Preliminary Seismic Assessment also indicates that the return period of an earthquake with the design MCE acceleration of 0.535 g is more than 200 years and its probability of occurrence during the next 50 years is below 10 percent.

All structures (including on and off-site pump stations) will be designed in accordance with the seismic design requirements of the most recent edition of the Uniform Building Code (Draft EIR page 4.2-13, Mitigation Measure GEO-7). The specific design provisions (wall and slab thickness, lateral bracing, structural configuration, etc.) for seismic enforcement will be developed during the design phase of this project.

The desalination plant operations will be fully automated and key systems will be provided with redundant equipment and controls as per the requirements of Title 22 of the California Code of Regulations. In the event of an underground booster pump station power outage, the booster pump station will be equipped with on-site power generators that will allow their operation to continue even if the main source of power supply has been interrupted. The desalination plant will be provided with two independent sources of power supply to assure uninterrupted operations during emergencies. The desalination plant will be manned 24 hours per day, 365 days per year by skilled and certified operators, which will coordinate plant and pump station operations with that of all other water purveyors delivering water to or operating the water distribution system facilities.

As a part of desalination and pumping station operations, the operations staff will develop an earthquake mitigation and preparedness plan, which will be coordinated with the local jurisdiction's preparedness activities. This plan will define coordination measures to assure continuous plant operations and water delivery under earthquake emergency conditions.

The desalination plant will be designed with one standby reverse osmosis train to provide additional reliability of water production and supply. Typically, desalination plants, including the existing desalination plants in California, are designed to operate with all available reverse osmosis trains in operation at all times. During the times of potential outages caused by scheduled or unscheduled maintenance or emergency events, such as an earthquake, these plants operate at reduced capacity or are down for a certain period of time. The proposed desalination plant will be designed to produce 50 mgd of product water with 12 RO trains, and will be constructed with an additional 13th RO standby train, which can produce up to 4.2 mgd of water at any time. This additional train will provide increased reliability and redundancy that exceeds current reliability standards and common practices for desalination plant design. The proposed desalination plant will be the first plant in California with such additional production standby capacity and reliability provisions.

The issues of reliability of the supply and emergency service provisions will be dictated by the terms of the institutional agreements negotiated with the regional water purveyors (including MWDOC and Metropolitan Water District) and by the terms of the water supply agreements negotiated with potential customers that will purchase the product water produced at the desalination plant.

16e. See Response 14d, above.

16f. See Response 14d, above.

16g. As stated with Section 3.0, *PROJECT DESCRIPTION*, of the Draft EIR, the applicant will obtain all agreements, permits, and approvals necessary for distribution of product water. The applicant will provide all necessary data to agencies who require it for permit acquisition from the Department of Health Services for distribution of the proposed project's product water. Several stakeholder meetings will occur during the permitting process to inform potentially affected agencies and receive their input.

16h. This text provides a conclusion to the comment letter and does not require a response.

ORANGE COUNTY SANITATION DISTRICT

November 4, 2002

Mr. Rickey Ramos, Associate Planner
City of Huntington Beach
Planning Department
2000 Main Street
PO Box 190
Huntington Beach, CA 92648

SUBJECT: Draft Environmental Impact Report for the City of Huntington Beach Poseidon Seawater Desalination Plant

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This letter is in response to the above referenced Draft Environmental Impact Report (DEIR). The proposed project involves the construction and operation of a 50 million gallons per day (mgd) seawater desalination facility located at 21652 Newland Street in the City of Huntington Beach (City). a

The Orange County Sanitation District (District) has reviewed the DEIR and offers the following comments:

1. The Watershed Sanitary Survey Report in Appendix E of the DEIR describes the District's effluent make-up as a blend of 50% primary and 50% secondary effluent. The District's Board of Directors on July 17, 2002, committed to provide secondary treatment standards for 100% of the District's effluent. The development of facilities to meet this new effluent standard could take up to 11 years to plan, design, construct and commission. A more detailed implementation plan is being developed by the District and will be completed in early 2003.

2. The DEIR and Appendices also do not reflect that the District began disinfecting its effluent on August 12, 2002, in compliance with an order issued by the Regional Water Quality Control Board to reduce the District's effluent bacteria concentration (less than 1,000 MPN/100mL of total coliform after initial dilution). The District is presently adding bleach as a disinfectant followed by sodium bisulfite to remove residual chlorine prior to ocean discharge. The District will continue using bleach and sodium bisulfite for the next 3 to 5 years. Testing and studies are presently underway to evaluate other disinfection technologies, including ultraviolet light, ozone and peracetic acid for long term application.

3. The DEIR includes an extensive analysis of the dispersion and dilution of the wastefield from the District's deep (120-inch diameter) ocean outfall. While the potential influences of various sources on water quality, including the District's120-inch diameter outfall were analyzed, the District's shallow (78-inch diameter) emergency outfall was not considered. The analysis omitted the emergency 78-inch diameter outfall because it has not been in operation since the 120-inch diameter outfall was placed in service in 1974.

The 78-inch diameter outfall is currently permitted for emergency use, and is projected to be placed in service at a frequency of once every three years during peak wet weather conditions under the District's future projected flows (year 2020). This projection takes into account the 100 mgd of peak flow relief that will be available when the Groundwater Replenishment System is completed in 2007. d

4. The DEIR on page 4.2-19 states that "first-flush" treated waste cleaning solution will be discharged to the local sewer for conveyance to the District. Table 4.3.2 indicates that the volume of waste cleaning solution would be 91,000 gallons, and page K-1 in Appendix K indicates that the flow rate of the sewer discharge would be 150 to 250 mgd. The sanitary sewer from the proposed desalination facility must first connect to the City's local system to convey the sewage to the District's 48-inch sewer in Newland Avenue, or 54-inch sewer in Pacific Coast Highway. The City will therefore be responsible for providing sufficient local sewer capacity to deliver the sewage to the District's system. e

   An Industrial Source Control Permit from the District will be required for the proposed discharge of waste cleaning solution to the sanitary sewer system. The discharge must comply with the limits and requirements contained in the District's Wastewater Discharge Regulations.

5. For the past three years, the District has been collecting and treating dry weather urban runoff that is generated within the City of Huntington Beach's watershed area in effort to reduce the bacterial loading impact onto Huntington State Beach, and to minimize beach closures within the coastal area. In particular, the Orange County Public Facilities and Resources Department and the City of Huntington Beach have constructed dry weather urban runoff diversion systems to intercept urban runoff from entering into the Huntington Beach and Talbert Channels, which are tributary to the Talbert Marsh. The flow from the Talbert Marsh is directly discharged onto Huntington State Beach shoreline. The Santa Ana Regional Water Quality Control Board has recommended this stretch of Huntington State Beach (between Magnolia and Newland) as an impaired water body and has added it to the Clean Water Act Section 303(d) list. Because the proposed project site is situated adjacent to the Huntington Beach Channel, any discharge that is generated from the project site may have the potential of being discharged into Huntington State Beach. Mitigation measures must be implemented to minimize discharges into the Huntington Beach Channel to prevent any additional loading of bacteria onto Huntington State Beach. f

6. The District regularly monitors for water quality, sediment geochemistry, and biological community analysis in the area offshore of the proposed discharge. Significant changes in the parameters may impact the District's monitoring. Poseidon should monitor this area for and/or should better clarify the following issues to demonstrate that the proposed discharge will not negatively impact the District's monitoring program. g

In Section 4.3 of the DEIR, there is no mention of lower salinity water, with higher bacteria levels, that has been observed from the surface to 10-meters of depth. This water moves from upcoast, most likely the San Gabriel or Los Angeles Rivers.

The modeling also appears to discount the recirculation of discharged water with intake waters that have been observed as part of subsequent studies done by the University of Southern California Sea Grant. If these two issues were factored in, how would the analysis be affected? g

Section 4.3 discusses acute versus average exposure of infauna species, but does not provide documentation on whether organisms are more affected by extreme or average conditions. If a biological community is periodically reduced or eliminated due to acute exposure, they may not recover sufficiently during the average conditions. The DEIR lists five infauna species that represent 90% of the organisms. How might increased salinity affect these dominant species or any of the rarer species that are potentially more susceptible to impacts? More information on epibenthic (bottom dwelling) fish would have been informative. h

While the predicted area of impact is local, the replacement of a climax community with opportunistic species or a different community has potential food web effects that may be significant. The finding on page 4.3-18 is not significant in the sense of spatial extent; however, it may be of a significant biological importance. A biological survey would be useful in addressing this concern. i

Also, information on measured or potential effluent toxicity would be useful in determining potential impacts. It appears that no testing was done or referenced on the toxicity of the proposed waste streams. j

7. As stated on page 4.9-16, construction of new pipelines will require careful review and coordination with District staff. The routing of the proposed pipelines will intersect a number of large District trunk sewers that will need to be protected in place. Also, the District's Bushard Trunk is scheduled for replacement with construction scheduled to begin in November 2002. k

Thank you for the opportunity to comment on the Poseidon Seawater Desalination Plant. If you have any questions, please contact Jim Herberg, Engineering Manager, for planning issues at (714) 593-7310 or Robert Ghirelli, Director of Technical Services, for water quality issues at (714) 593-7400. l

David A. Ludwin, P.E.
Director of Engineering

DAL:JDH:sa

C: R. Ghirelli M. Moore T. Mereg[illegible] J. Wybenga G. Robinson

Response No. 17

Orange County Sanitation District
David A. Ludwin, PE, Director of Engineering

17a. This text provides a brief summary of the project description, and does not require a response.

17b. The new secondary treatment standards to be implemented by the Orange County Sanitation District (OCSD) are not anticipated to result in increased impacts over those identified in Appendix E (*WATERSHED SANITARY SURVEY*) of the Draft EIR. This change will be reflected in the Draft EIR and Appendices as shown in Section 3.0, *ERRATA.*

17c. The Draft will be revised to reflect this change as shown in Section 3.0, *ERRATA.*

17d. Comment noted. No response is necessary.

17e. This information has been incorporated into the Draft EIR within Section 3.0,*PROJECT DESCRIPTION* and Section 4.6, *PUBLIC SERVICES AND UTILITIES.* These changes are shown in Section 3.0, *ERRATA.*

17f. The proposed desalination facility would direct all stormwater to an on-site local drainage system. The stormwater would then be pumped to the 48-inch by-product brine discharge line that ultimately connects to the AES outfall line. As alternative options, the desalination facility's on-site stormwater system could discharge stormwater to the AES on-site stormwater system or the City of Huntington Beach local storm water system, both of which ultimately convey stormwater to the Pacific Ocean via the AES outfall. No wet or dry weather runoff would be discharged into the Huntington Beach Channel. Refer to Section 4.6, *PUBLIC SERVICES AND UTILITIES.*

17g. The proposed desalination plant discharge is not expected to have a measurable impact on the OCSD's wastewater treatment plant effluent water quality, and therefore will not require changes to OCSD's monitoring program or additional monitoring in the currently monitored area. The "worst case" scenario ocean water salinity increases as a result of the desalination plant discharge are depicted on Exhibits 13 and 14 (Draft EIR pages 4.3-14 and 4.3-15). Review of these exhibits indicates that the desalination plant discharge salinity concentration will diminish to levels close to the background ocean water salinity of 33.6 parts per thousand (ppt) before it reaches the OCSD outfall and monitoring area. The accuracy of the currently available instrumentation for seawater salinity measurement is +/- 0.1 ppt. As shown on Exhibits 13 and 14, under the "worst case" scenario the discharge salinity concentration of the desalination plant discharge decreases to 33.6 ppt (within + 0.1 ppt of the background seawater concentration of 33.5 ppt) in less than 2,000 feet from the desalination plant point of discharge. The OCSD discharge outfall is more than 5 miles (26,400 feet) away from the power plant outfall. Comparison of the data shown on Exhibits 13 and 14, and the OCSD's monitoring area depicted in the OCSD 2001 Marine Monitoring Annual Report, indicates that by the time the desalination plant discharge reaches the OCSD monitoring area, the salinity change contributed to the desalination plant discharge will be within the range of natural variability, and therefore will be non-detectible.

As far as other constituents of concern for the OCSD discharge, the desalination plant discharge water quality will be well within the limits established in the Ocean Plan.

Therefore, the desalination plant discharge is not expected to have any measurable effect on the results of the OCSD's monitoring program.

Although Section 4.3 of the Draft EIR does not explicitly mention the lower salinity water phenomenon referenced by the comment, the described phenomenon was taken under consideration in the hydrodynamic modeling of the desalination plant intake and discharge water quality. A detailed description of the phenomenon and how the phenomenon's effect is incorporated in the model is presented in Sections 2 and 3 of the Hydrodynamic Modeling report, attached as Appendix C to the Draft EIR. The analysis presented in these sections indicates that the described phenomenon has a negligible effect on the desalination plant intake and discharge water quality.

Section 5 of the Hydrodynamic Modeling report has also factored in the recirculation of discharged water from the AES outfall. The recirculation analysis presented in this section indicates that the recirculation is negligible (see Draft EIR, Appendix C, page C-64). Although the results of studies performed by the University of Southern California Sea Grant may be different, the project-specific Hydrodynamic Modeling report concludes that less than 0.003% of plant effluent is estimated to be recycled through the plant infall under the worst-case scenario.

17h. There are many references dealing with the epibenthic fish abundance and diversity in the Huntington Beach area. Appendix F in the Draft EIR cites references and provides details about the most common benthic species which include the California lizardfish and a small flatfish, the speckled sanddab. Other fishes also occur in this habitat. See Response 10e, above. Also refer to Response 6b, above.

17i. There will be little or no salinity effect on marine community structure in the area of the discharge. A salinity-caused extinction of the local marine community within a discrete area will not occur as a result of the proposed concentrated seawater discharge under "average" conditions. The comment about biological as opposed to spatial effects reflects an important insight into the long-term nature of the salinity discharge question. The answer is that long-term studies or studies of salinity exposure effects on growth and reproduction (i.e., basic life processes not just survival) are the best way to begin to comprehend subtler biological effects. Biological surveys do already exist. See Response 7f, above. Also refer to Response 6b, above.

17j. Effluent toxicity monitoring will be performed as part of the project's compliance with the Regional Water Quality Control Board's (RWQCB) National Pollution Discharge Elimination System (NPDES) permit process. Such monitoring will ensure that the discharge from the proposed desalination facility will be below established thresholds for ocean waters.

17k. The applicant will coordinate with OCSD staff during the design phase for the proposed pipeline portion of the project. In addition, as stated in Section 4.9, *CONSTRUCTION RELATED IMPACTS* of the Draft EIR, the project engineer will identify the locations of existing underground utilities, and should a design conflict occur, either the proposed pipeline or existing utility will be rerouted.

17l. This paragraph contains contact information for the agency, and does not warrant a response.